

*We will always proceed deliberately, weighing the consequences of our actions.
To support preemptive options, we will continue to transform our military forces to ensure
our ability to conduct rapid and precise operations to achieve decisive results.*

The National Security Strategy, September 2002

POWER PROJECTION SHORTFALL

During times of relative political and social normalcy as outlined in the Working Papers May 2002 article, *A New Equation—U.S. Policy after September 11*, the security of the United States and the rest of the world has been adequate impart to the United States' ability to project its military forces. However due to the shifting geopolitical arena of the world, the United States has been forced to re-look its ability to deploy its combat power from the perspective of preempting an adversary's aggressive actions instead of one of reaction.

The threat today necessitates a change in military combat power projection capability that not only involves lethality but as important, combat power that is flexible, agile, swift, and sustainable. The ability to deploy forces quickly and sustain them continues to be a core requirement for Combatant Commanders. Thus far, the United States has had the opportunity to take over four months to deploy its forces necessary to engage Iraq, however it is rather doubtful the United States will have this luxury in the future. This round two with Iraq has shown the United States no longer has the flexibility of using different ports/airfields/airspace as it once enjoyed. This lack of flexibility translates into lack of speed, agility, and combat lethality. With the limited availability of long-range aircraft that can move heavy equipment, airfields with limited space for operations, and ports with draft constraints-- together contribute to the need for military forces to evaluate how force projection may occur in the future. Undoubtedly, strategic airlift is critical to the initial stage of any operation; however, high-speed sealift offers additional opportunities for force projection. This added capability could provide for the rapid movement into, and within, a theater of

operations in support of missions requiring the projection, employment, and sustainment of forces across the entire spectrum of force projection.¹ In concert with the commercial growth in the high-speed sealift industry, the United States' military has shown significant interest in this emerging technology. To capitalize on this technology, this paper will discuss the advantage of high-speed sealift and its options for future investment as it relates to the military and commercial shipping industry.

Victory is the beautiful, bright-colored flower. Transport is the stem without which it could never have blossomed.

--Winston Churchill

DEFINING THE REQUIREMENT FOR HIGH-SPEED SEALIFT

The military's ability to rapidly and effectively deploy and employ U.S. forces has always been a challenge. Luckily for the United States, Iraq has always allowed coalition/U.S. forces time to build-up its combat power. The United States' military mobility to build-up combat power has centered around three areas: pre-positioned ships, airlift, and sealift. The deployment challenge has been transferring the volume of people, equipment, and supplies through the strategic pipeline into meeting required deadlines imposed/validated by the Combatant Commander. Thus, the velocity of movement becomes a critical part of any war plan. What are the elements that have slowed down this pipeline? The slow down is attributable to a reduced permanent presence overseas, heavy reliance on air assets, and the limited capability of ports. These three factors have been constant over the last ten years and the U.S. military has neglected to find solutions to its deployment/employment shortfalls...other than build a limited number of new cargo planes, fighter planes, and build new and bigger pre-position ships. The fact we have bigger planes and

ships only exasperates the situation because overseas airfields/ports can only handle limited number of offloads driven by space, people, and material handling equipment restraints.

Since the movement of forces into theater has been challenging, it can be discerned that the critical path to war is force closure. Force closure is simply the integral part of the employment and deployment of forces. The inability of a nation to project sufficient forces...combat power, move them to the area of responsibility, and support them once engaged will severely affect the forces' tactical capability. If military combat power is slow getting in...logistics support may be even slower.

Thus far, the United States has moved the mountain to the sea but with limited speed and no maneuver capability. Now with emerging high-speed sealift technologies may significantly improve the movement/distribution capabilities of personnel, equipment, and cargo. Without timely insertion of combat power and logistics support, the military may fall short on the combat power required to conduct a war/military operations. Therefore, what must the United States do...and what must the military do to ensure military success?

HIGH-SPEED SEALIFT – THE NEXT GENERATION OF SEALIFT

As discussed earlier, the new threat environment requires new operational ways of doing “business” and high-speed sealift is more than moving personnel, equipment, and supplies faster across the ocean. *High-speed sealift*, as defined by the Center for the Commercial Deployment of Transportation Technologies (CCDoTT), is “dual use ocean going, coastal and ferry vessels with speed capabilities of approximately 40 knots or greater, using high-speed technology hulls, advanced ship control, and propulsion machinery systems.”² It enables and promotes an enhanced capability of maneuver not just for the Marine Corps but for Department of Defense (DoD) as well. The Army is taking steps to transform itself from the heavy-legacy force, which we have

learned is difficult to deploy, to a lighter and strategically response force.³ Joint Vision 2020 has provided the framework for all services to adapt to dominant maneuver and focused logistics. Dominant maneuver issues the challenge for a faster moving force to conduct joint operations, while focused logistics, requires enhanced transportation assets to allow rapid crisis response and the flexibility to quickly shift assets as required. High-speed sealift supports Joint Vision 2020. The challenge then becomes, is the best option for high-speed sealift capability for inter-theater or intra-theater mission?

Strategic mobility, the ability to move military forces across intercontinental distances into an operational theater, is a critical component of U.S. military force projection but moving within the operational theater can be just as critical. To support force projection, U.S. Transportation Command (TRANSCOM) and Military Sealift Command (MSC) are searching for the next-generation of sealift ships. As TRANSCOM and MSC look to capitalize on high-speed sealift commercial technology, they are working with CCDoTT a chartered university center at California State University, Long Beach. CCDoTT functions as a partnership of academic institutions, government and commercial corporations to: leverage high-speed sealift technologies, conduct R&D for defense and commercial transportation infrastructure initiatives, and most importantly prove a technology transfer interface between DoD and commercial industry.⁴ As part of this study, CCDoTT sponsored a project lead by Stanley Associates, Inc., which analyzed the degree to which existing and planned commercial high-speed sealift could be of potential use to DOD (e.g., included input from Combatant Commanders, representatives from the Army, Marine Corps, Navy, and TRANSCOM).⁵ The most important aspect to this study, is that it defined the utility of high-speed sealift for DOD and that is—there is *significant interest* in the potential use of commercial high-speed sealift cargo ships and freight ferries in the 2000-2010 timeframe. Specifically, the majority of the respondents believe there is a potential DOD utility for **intra-**

theater high-speed sealift for unit equipment, combat support, combat service support, and ammunition.⁶

INTRA-THEATER HIGH-SPEED SEALIFT

Through the Marine Corps' and Army's experimentation efforts with High-Speed Vessels (HSVs) over the last four years, lessons learned have demonstrated the flexibility high-speed sealift offers in providing intra-theater personnel, cargo movement, and logistics support. Additionally, this experimentation revealed additional advantages afforded by HSVs in terms of its shallow draft, maneuverability, speed, range, and payload. As a result, HSVs have the potential to *support* the following intra-theater missions: Enhanced Networked Sea Basing and Maritime Prepositioning Force Future, Marine Operational and Tactical Maneuver, Mine Warfare, Advance Force Operations, Military Operations Other Than War, and Intra-Theater Lift.⁷ It is evident that HSVs enhance force projection capabilities and provide for the rapid entry into, and within, a theater of operations in support of missions requiring the projection, employment, and sustainment of forces across the entire spectrum of military operations.⁸ With the incredible capability HSVs offer and the keen interest that the Office of the Secretary of Defense (OSD)/DoD have for this technology, high-speed sealift must be approached from a systems approach, focusing on speed, availability, timeliness, and the necessary trade-offs to make this concept work.⁹ To understand better the advantages of high-speed sealift, the following discussion will look at the viability of this capability.

APPLICATION OF HIGH-SPEED SEALIFT CAPABILITY

The ability to transient the ocean quickly to project military power has been part of a great debate while discussing trade-offs between speed, volume/weight of cargo to be moved, and range.

However, will faster ships make a difference in DoD? More importantly, could this improved transportation capability have the attributes preferred over “regular” commercial shipping modes? The following paragraphs will discuss these questions.

Historically, more than 95 percent of the transportation requirements necessary to sustain U.S. military operations overseas have been by sealift.¹⁰ To possess the flexibility of having sealift assets, DoD has invested a considerable amount of funding in a strategic pre-positioning ship program (e.g., lease and procurement of old and new ships). This pre-positioning program has expanded over the last 10 years. Between the Marine Corps and the Army, the cost of pre-positioning has become significant, at some point in time, there must be a diminishing return between cost vs. accessibility to ports due to draft limitations, and force protection issues due to time spent in port or at anchorage.¹¹ Therefore, changes in the geopolitical arena as noted earlier coupled with HSV technology advances, have now made **speed more than ever a critical component** to increasing and improving force closure options as well as force protection by allowing amphibious and pre-position ships to remain over-the-horizon.¹² How can this speed requirement help the commercial shipping industry?

A shipper mode perception study involving 500 responses from the commercial industry was conducted in 1996, that evaluated shipper perceptions of transportation services—specifically, the study was concerned not with the level of service actually provided by different modes of transportation but with the level of service perceived by various shippers.¹³ Why is this study important? It is important for two reasons: (1) the study findings can support the HSV requirement drawn from the observations and conclusions from military experiments that concluded high-speed sealift capability is a force enabler providing mission critical speed and maneuverability; and (2) provide the direction for the commercial HSV industry.

From this study, six factors were used to identify the impact that shipper perceptions of various individual transportation service characteristics have on overall shipper perception of transportation modes. The factors evaluated in the study were: timeliness, availability, firm contract, suitability, cost, and restitution.¹⁴ The study determined that while firm contract, cost, restitution, and suitability were important, it found shipper's overall perceptions are more greatly affected by *timeliness* and *availability*. Moreover, the greatest finding from this study found these factors were relatively similar across modes, thereby indicating shippers generally form overall perceptions of different modes using similar factors, particularly with respect to timeliness and availability.¹⁵ Comparing this study to high-speed sealift experiments, it reveals a perception correlation between the study's factors of timeliness – availability and DoD's requirement for speed – maneuverability. Therefore, the perception a shipper (e.g., commercial or military) has regarding a mode can determine whether that mode is used.¹⁶ Further, the study's conclusions are of importance to the commercial shipping industry in that it can be used to help direct their marketing and operational efforts which will in-turn redefine hopefully, the shipping industry's high-speed sealift capability.¹⁷

IMPLEMENTATION OF HIGH-SPEED SEALIFT CAPABILITY

The question then becomes: Is the cost of high-speed sealift worth the expense to the U.S. commercial shipping industry? Currently, commercial interest in the development and implementation of high-speed sealift systems to emerging market opportunities is there-- but not strong enough in the commercial shipping sector to begin construction. The incremental dollar costs associated with speed and cargo lift have proven to be economically unfeasible for large commercial cargoes. For example, the eight fast sealift ships that are in the MSC inventory are there because they could not be operated profitably by the commercial sector.¹⁸

Based on the premise of DoD using commercially viable -- militarily useful HSS vessels, there appears to be a catch-22. That is, DoD is waiting to leverage commercial capability to enhance sea speed and maneuverability and the U.S. shipping industry is waiting for a commitment from DoD for this capability before they proceed. For this technology to mature for military use and be worth the expense to the shipping industry, DoD must support the shipping industry's research and development efforts. That is why the Army is in the process of releasing a request for proposal for the purchase of two theater support vessels (TSV) with high-speed sealift capability – with the hope, this contract will be a catalyst for the U.S. commercial industry to build more.

THE U.S. SHIPPING INDUSTRY – A TIME TO CHANGE

As noted earlier, the military has depended on commercial sealift for surge and sustainment capabilities. Now with high-speed sealift technology—the military will also become dependent on the commercial shipping sector to enhance its force closer requirements. Since shipping availability for national defense is vital to national security...Why isn't the U.S. shipping industry working closer with DoD on integrating this new technology within the industry to further enhance national defense? The simply answer is that the U.S. shipping industry has stagnated in the last 40 years.¹⁹ As a result, foreign shipbuilding and shipping industry have taken the competitive edge in shipping volume capability, foreign ship work design and component manufacturing. It appears the U.S. shipping industry is more concerned with preserving its current infrastructure than investing in new technology.

If the shipping industry is ready—the time is at hand for change. Based upon data from the November 2001 Report on High Speed Ferries and Coastwise Vessels—the Federal Highway Administration predicts both coasts' domestic truck flows will significantly increase over the next 8 years especially the North Atlantic region. This report concluded that coastal shipping (high-speed

craft) will significantly reduce the number of trucks moving along the north/south coastal roads therefore reducing in-transit times of goods.

Combining the shipper mode study, DoD's requirement for HSVs and the November 2001 Report on High Speed Ferries and Coastwise Vessels...reveal a re-occurring theme of speed and availability expectations and requirements. Applying scarce resources to relatively new technology is risky however; several European countries are using HSV technology now. If the U.S. shipping industry neglects this opportunity for HSVs—they will not only lose the market but will lose the opportunity to explore transoceanic HSV technology.

FUTURE OF HIGH-SPEED SEALIFT

To engage in future conflicts/wars, the United States must use speed combined with overwhelming firepower to be successful. The U.S.'s vulnerability is time—the time it will take to response to a crisis. Therefore, the military must rethink...in other words transform its thought process to fight the next fight. To assist, DoD must support the commercial shipping industry with High-speed sealift requirements...thereby improving operational and tactical operations through increase speed and maneuverability. The success of the U.S. military strategy of power projection depends heavily on the mobility of the military...simply stated, the ability of the military to quickly deploy and inflict sufficient combat power on the enemy anywhere in the world. All services regard themselves to be expeditionary.

The military does have an opportunity to be a catalyst for leading-edge technology that may have a tremendous impact on transportation systems. The transportation industry is slow to implement change due to investment requirements, therefore it is incumbent on the military to participate with U.S. industry to refine this existing technology/capability. To support the precepts as outlined in the National Security Strategy, the military/DOD must persuade Congress to invest

militarily significant technologies, which in-turn will support the national economy. However to do so, it is up to our military leaders to define the requirement for maneuverability and speed. Without a strategy and without conceptual unity within the Department of Defense, high-speed sealift technology will not improve. Moreover, our shipping industry will miss an opportunity to gain the competitive edge in HSV technology/capability and market opportunities.

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